Shallow-water Benthic Habitat Mapping of the Republic of Palau

Objectives

In April 2005, CCMA's Biogeography team initiated a kick-off meeting with Palauan resource managers, scientists, and government officials to to discuss the shallow water mapping of benthic habitats of the Republic of Palau. Although NOAA has previously committed resources and personnel (i.e. IKONOS imagery collection, conservation grants, geodetic control) to conducting mapping activities within Palau, the kick-off meeting represented the first opportunity to present NOAA's proposed technical approach. The objective of the mapping effort will be to complete the delineation and identification of all shallow water benthic habitats (<30 meters water depth) by Spring 2007 according to the mapping methodologies NOAA has implemented elsewhere in the Pacific. As a result of this project, a series of digital products will be produced will further NOAA committment towards completion of the U.S. Coral Reef Task Force's recommendation to develop shallow-water coral reef ecosystem maps for all U.S. waters and the Freely Associated States by 2009.

Project Summary

Most U.S. coral reef resources have not been digitally mapped at a scale or resolution sufficient for assessment, monitoring, and/or research to support resource management. Thus, a large portion of NOS' coral reef research activities has focused on mapping of U.S. coral reef ecosystems. The map products produced for the republic of Palau will provide the fundamental spatial organizing framework to implement and integrate research programs and provide the capability to effectively communicate information and results to coral reef ecosystem managers. Although the NOS coral program is relatively young, it has had tremendous success in advancing towards the goal to protect, conserve, and enhance the health of U.S. coral reef ecosystems. One objective of the program was to create benthic habitat maps to support coral reef research to enable development of products that support management needs and questions. Therefore this product will be developed in collaboration with many U.S./Pacific/Palau partners.

The classification scheme used to map benthic habitats for Palau will include thirty-two distinct benthic habitat types (i.e., four major and 14 detailed geomorphological structure classes; eight major and 18 detailed biological cover types) within twelve zones will be mapped directly into a geographic information system (GIS) using visual interpretation of orthorectified IKONOS satellite imagery. Shallow water benthic features will be mapped covering an area of 2,300 km^2. Users will have access to a suite of information including access to the primary and derived data sets, detailed information on how the mapping was conducted and data was collected, custom tools used to create the product, and reports summarizing the results:

- Access to primary data sources (i.e., IKONOS imagery, accuracy assessment field data, ground validation field data, spatial accuracy field data)
- Access to derived data sources (i.e., benthic habitat GIS files, final reports, shoreline GIS files)
- Directions for using the "habitat digitizer" extension in ArcView
- A description of the specific methods used to create the habitat maps
- An assessment of the thematic accuracy of the maps




Products

Reports and Publications

- Benthic Mapping Kick-off Planning Meeting (April 2005) (*Attached PDF file link)

Data

- ArcIMS Map Browser (Instructions)

  Palau

- Digital Elevation Models (link to this http://biogeo.nos.noaa.gov/products/mapping/dems/)
- LIDAR data

Tools

- Habitat Digitizer

Partners

- Analytical Laboratories of Hawaii
- NOAA National Geodetic Survey
- Palau Automated Land and Resource Information System (PALARIS)
- Ministry of Resources and Development
- Coral Reef Research Foundation
- Palau International Coral Reef Center

- Office of Environmental Response and Coordination (OERC)

Time Frame

Mapping efforts to be completed Spring 2007

For More Information

Administrative/Technical Contact:
Tim Battista
1305 East West Highway
SSMC-IV, N/SCI-1
Silver Spring, MD 20910
301-713-3028 x171